

**Colusa County Air Pollution Control District**  
100 Sunrise Blvd., Ste. F  
Colusa, CA 95932  
(916) 458-0590

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**Title V Operating Permit**

is Hereby Granted to

**Pacific Gas & Electric Company**

for Equipment Located at:

Delevan Compressor Station  
Dirks Road, SW1/4 S36 T18N R4W  
Colusa County, CA

Subject to the Listed Conditions

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Type of Facility:	Natural Gas Compressor Station
Primary SIC:	4922

Issue Date:	February 1, 1998
Expiration Date:	January 31, 2003

**Permit No: 9006-215**

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Air Pollution Control Officer

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## EQUIPMENT LIST

Equipment Description	Make or Type	Model	Capacity
Cold Cleaning Solvent Degreaser Solvent: Chevron 350H non-halogenated <sup>1</sup>	-----	-----	-----
Turbine Engine Set, Natural Gas-Fired - K1	General Electric	Frame 3 MS3002F	9100 HP
Turbine Engine Set, Natural Gas-Fired - K2	General Electric	Frame 3 MS3002F	9100 HP
Turbine Engine Set, Natural Gas-Fired - K3	Solar Mars	SoLoNOx - T-14000	14350 HP

## EMISSION LIMITS AND STANDARDS

- Equipment located at the Pacific, Gas, & Electric Company (PG&E)'s Delevan facility, including the gas turbines, shall not discharge air contaminants into the atmosphere for a period or periods aggregating more than three (3) minutes in any one hour which is as dark or darker than Ringlemann No. 2 (40% opacity). [Colusa County Air Pollution Control District (CCAPCD) Rule 4.3 - RINGLEMANN CHART (current Rule 2.13 - VISIBLE EMISSIONS), approved by U.S. Environmental Protection Agency (U.S. EPA) in 37FR19812 (9/22/72)]
- Particulate emissions from fuel burning equipment, including the gas turbines, shall not exceed 0.30 grains per cubic foot of dry gas calculated to 12 percent CO<sub>2</sub> at standard conditions. [CCAPCD Rule 4.12 - SPECIFIC AIR CONTAMINANTS (Current Rule 2.15 - PARTICULATE CONCENTRATION), approved by U.S. EPA in 37FR19812 (9/22/72)]
- The emissions of sulfur compounds, calculated as sulfur dioxide (SO<sub>2</sub>), from fuel burning equipment, including the gas turbines, shall not exceed 0.2 percent by volume. [CCAPCD Rule 4.12 - SPECIFIC AIR CONTAMINANTS, approved by U.S. EPA on 9/22/72 (Current Rule 2.22 - SULFUR OXIDES)]
- Stationary fuel burning equipment, including the gas turbines, shall use California Public Utility Commission (CPUC) regulated natural gas at all times. [CCAPCD Rule 2.7B - CONDITIONAL APPROVAL (current Rule 3.5 - CONDITIONAL APPROVAL), approved by U.S. EPA in 47FR26379 (2/25/80)]

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<sup>1</sup> The degreaser is part of the facility's insignificant activities.

5. At all times, including periods of startup, shutdown, and malfunction, PG&E shall, to the extent practicable, maintain and operate all fuel burning equipment, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR Part 60 Subpart A - General Provisions, Section 60.11(d), CCAPCD Rule 2.7B - CONDITIONAL APPROVAL (current Rule 3.5 - CONDITIONAL APPROVAL), approved by U.S. EPA in 47FR26379 (2/25/80)]
6. PG&E shall obtain the approval of the Air Pollution Control Officer (APCO) prior to using halogenated solvents in the cold cleaning solvent degreaser. [40 CFR Part 63, Subpart T, Maximum Achievable Control Technology (MACT) Standards for Halogenated Solvent Cleaning Operations]

**Additional emission limits and standards for the Solar Mars gas turbine:**

7. Emissions from the Solar Mars gas turbine shall not exceed the following limits: [CCAPCD Rule 2.7B - CONDITIONAL APPROVAL (current Rule 3.5 - CONDITIONAL APPROVAL), approved by U.S. EPA in 47FR26379 (2/25/80)]

Emission Limits Solar Mars Gas Turbine PG&E Delevan Gas Compressor Station	
Pollutant	Emission Limit
Nitrogen Oxides (NO <sub>x</sub> calculated as NO <sub>2</sub> )	30 ppmv at 15% O <sub>2</sub>
	250 lbs/day
	40 tons/yr
Carbon Monoxide (CO)	500 lbs/day
	92 tons/yr
Reactive Organic Compounds (ROC calculated as CH <sub>4</sub> )	20 lbs/day
	4 tons/yr
Sulfur Oxides (SO <sub>x</sub> calculated as SO <sub>2</sub> )	10 lbs/day
	2 tons/yr
Particulate Matter Less Than Ten Microns In Diameter (PM <sub>10</sub> )	32 lbs/day
	6 tons/yr

8. PG&E shall not cause to be discharged into the atmosphere from the Solar Mars gas turbine, any gases which contain nitrogen oxides (NO<sub>x</sub>) in excess of 201 parts per million by volume (ppmv) at 15 percent oxygen and on a dry basis. [40 CFR Part 60 Subpart GG - Standards of Performance for Stationary Gas Turbines, Section 60.332(a)(2)]
9. PG&E shall not burn in the Solar Mars gas turbine any fuel which contains sulfur in excess of 0.8 percent by weight. [40 CFR Part 60 Subpart GG - Standards of Performance for Stationary Gas Turbines, Section 60.333(b)]

## **TESTING, MONITORING, AND REPORTING REQUIREMENTS**

10. Breakdown condition
  - a. As soon as reasonably possible, but not later than one (1) hour after its detection during a regular business day (8:00 a.m. - 5:00 p.m.), or one (1) hour after the start of the next regular business day, whichever is sooner, PG&E shall report, via phone or fax, a breakdown to the APCO.
  - b. The breakdown shall be logged, investigated and handled to its final disposition in accordance with uniform District procedures.
  - c. Within ten (10) days after a breakdown occurrence has been corrected, the owner or operator shall submit a written report to the APCO including, but not limited to, the following details:
    1. Duration of excessive emissions;
    2. Estimate of quantity of emissions;
    3. Statement of the cause of the occurrence; and
    4. Corrective measures to be taken to prevent a recurrence.

Documentation of the breakdown condition may be required by the APCO.

- d. A breakdown condition is an unforeseeable failure or malfunction of any air pollution control equipment or related operating equipment which causes a violation of any emission limitation or restriction prescribed by the District's rules and regulations, or by state law, or similar failure of any required instack continuous monitoring equipment.

[CCAPCD Rule 3.17- PERMITS TO OPERATE FOR SOURCES SUBJECT TO TITLE V OF THE FEDERAL CLEAN AIR ACT AMENDMENTS OF 1990]

11. Emergency event
  - a. Within two working days of the emergency event, PG&E shall provide the APCO, via

phone, written statement, or fax, the following information:

1. A description of the emergency;
  2. Estimated duration of the emergency; and
  3. Any mitigating or corrective actions taken.
- b. Within two weeks of an emergency event, PG&E shall submit to the District a properly signed, contemporaneous log or other relevant evidence which demonstrates that:
1. An emergency occurred;
  2. The cause(s) of the emergency can be identified;
  3. The facility was being properly operated at the time of the emergency; and
  4. All steps were taken to minimize the emissions resulting from the emergency.
- c. The APCO shall be notified when the condition causing the emergency event has been corrected and the equipment is again in operation.
- d. A report for each emergency event shall be submitted to the APCO as part of PG&E's semiannual monitoring report.
- e. An emergency event is any situation arising from a sudden and reasonably unforeseeable event beyond the control of PG&E which causes the exceedance of a technology-based emission limitation. An emergency event constitutes an affirmative defense to an action brought for non-compliance with technology-based emission limitations if the conditions in 11.b. are met.

[CCAPCD Rule 3.17- PERMITS TO OPERATE FOR SOURCES SUBJECT TO TITLE V OF THE FEDERAL CLEAN AIR ACT AMENDMENTS OF 1990]

12. PG&E shall report any deviation from permit requirements in this Permit to Operate, other than emergency events, to the APCO, via phone or fax, within 96 hours. A report for each deviation from permit requirement shall be prepared by PG&E within two weeks after the initial detection of the deviation. Unless requested earlier by the APCO, these reports shall be submitted to the APCO as part of PG&E's semiannual monitoring report. [CCAPCD Rule 3.17]
13. PG&E shall submit a written monitoring report to the APCO every six months. The reporting periods shall be February 1 to July 31 and August 1 to January 31. These reports shall be submitted within 45 days of the end of each reporting period. When deviations have not occurred during the reporting period or emission testing has not been performed during the reporting period, such information shall be stated in the report.

The monitoring report shall include, at a minimum:

- a. A report for each deviation from permit requirements that occurred during the reporting period, including emergency events. PG&E shall use district approved forms to report each deviation from permit requirement;
- b. Results of any emission testing done during the reporting period; and
- c. A Certification Report form (Form 3.17-J1), which includes a certification regarding the truth, accuracy, and completeness of the report from the responsible official.

[CCAPCD Rule 3.17]

- 14. PG&E shall submit compliance certification reports to the U.S. EPA and the APCO every twelve months. The report shall be submitted every February 1. PG&E shall use District approved forms for the compliance certification and shall also include a written statement from the responsible official which certifies the truth, accuracy, and completeness of the report. [CCAPCD Rule 3.17]
- 15. With the exception of unit K3, the Solar Mars gas turbine, no annual testing requirement is specified for particulate emissions limits, located at PG&E's Delevan facility. All fuel burning equipment at the facility is expected to be in compliance with the particulate limits due to being fired on CPUC regulated natural gas. If testing is conducted, PG&E should conduct the testing in accordance with the methodology contained in ARB Method 5 (or subsequent or approved alternative method). [CCAPCD Rule 3.17]
- 16. No annual testing requirement is specified for the opacity requirement specified in condition 1., unless a test is requested by the APCO. All fuel burning equipment at the facility is expected to be in compliance with the opacity standard due to being fired on CPUC regulated natural gas. When testing is conducted, PG&E should conduct the testing in accordance with the methodology contained in U.S. EPA Method 9 (or subsequent or approved alternative method) and the averaging period contained in District Rule 4.3 (current Rule 2.13). [CCAPCD Rule 3.17]
- 17. No annual testing requirement is specified for the sulfur limits specified in condition 3., unless a test is requested by the APCO. All fuel burning equipment at the facility is expected to be in compliance with both sulfur limits due to being fired on CPUC regulated natural gas. At the request of the APCO, PG&E shall provide results of testing done to determine the sulfur content of the natural gas used as fuel at the facility. [CCAPCD Rule 2.7B - CONDITIONAL APPROVAL (current Rule 3.5 - CONDITIONAL APPROVAL), approved by U.S. EPA in 47FR26379 (2/25/80)]
- 18. Records of all monitoring and support information shall include the following: 1) date, place, and time of measurement or monitoring equipment maintenance activity; 2) operating conditions at the time of measurement or monitoring equipment maintenance activity; 3)

date, place, name of company or entity that performed the measurement or monitoring equipment maintenance activity and the methods used; and 4) results of the measurement or monitoring equipment maintenance. The monitoring and support information shall be retained for at least five years from date of collection of the measurements. [CCAPCD Rule 3.17]

**Additional testing, monitoring and reporting requirements for the Solar Mars gas turbine:**

19. The annual emission limits specified in condition 7. shall be based on a 12-month rolling average. The daily emission limits specified in condition 7. shall be based on a 24-hour rolling average. [CCAPCD Rule 2.7B - CONDITIONAL APPROVAL (current Rule 3.5 - CONDITIONAL APPROVAL), approved by U.S. EPA in 47FR26379 (2/25/80)]
20. Compliance with the NO<sub>x</sub> limits specified in conditions 7. and 8. shall be determined using a Continuous Emissions Monitoring (CEM) or Continuously Calculated Emissions Monitoring (CCEM) system. [CCAPCD Rule 2.7B - CONDITIONAL APPROVAL (current Rule 3.5 - CONDITIONAL APPROVAL), approved by U.S. EPA in 47FR26379 (2/25/80)]
21. A Relative Accuracy Test Audit (RATA) must be conducted on the CEMS at least once every four calendar quarters, according to the performance specifications for continuous monitoring systems under 40 CFR Part 60, appendix B. [40 CFR Part 60 Subpart A - General Provisions, Section 60.13(a), 40 CFR Part 60, appendix F, Section 5]
22. Compliance with the ROC, PM<sub>10</sub>, CO, and NO<sub>x</sub> limits specified in condition 7. shall be determined based on emissions source tests conducted on the Solar Mars gas turbine every other year at least sixty (60) days prior to January 31 and shall conform to EPA or ARB methodology and procedures. Any deviation from these requirements shall first be approved by the District. A source test protocol shall be submitted to the District at least thirty (30) days prior to the scheduled test date. The District shall be notified at least ten (10) days prior to any scheduled source test. The results of the source test shall be submitted to the District and the EPA within forty-five (45) days following testing. [40 CFR Part 60 Subpart A - General Provisions, Section 60.8(a) and (d)]
23. When conducting the source test required in condition 22., Method 20 (or subsequent or approved alternative method) shall be used to determine the nitrogen oxides, and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. The NO<sub>x</sub> emissions shall be determined at 30, 50, 75, and 100 percent of peak load or at four points in the normal operating range of the gas turbine, including the minimum point in the range and peak load. [40 CFR Part 60 Subpart GG - Standards of Performance for Stationary Gas Turbines, Section 60.335(c)(3)]
24. Compliance with the nitrogen oxide limit specified in condition 8. shall be determined using the following calculation:



$$\text{NOx} = (\text{NOx}_o) (P_r/P_o)^{0.5} e^{19(H_o-0.00633)} (288^\circ\text{K}/T_a)^{1.53}$$

where:

NOx = emission rate of NOx at 15 percent O<sub>2</sub> volume percent.

NOx<sub>o</sub> = observed NOx concentration, ppm by volume.

P<sub>r</sub> = reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg.

P<sub>o</sub> = observed combustor inlet absolute pressure at test, mm Hg.

H<sub>o</sub> = observed humidity of ambient air, g H<sub>2</sub>O/g air.

e = transcendental constant, 2.718.

T<sub>a</sub> = ambient temperature, °K.

[40 CFR Part 60 Subpart GG - Standards of Performance for Stationary Gas Turbines, Section 60.335(c)(1)]

25. The zero (or low-level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts for the continuous monitoring system shall be checked at least once daily. The zero and span shall, as a minimum, be adjusted whenever the 24-hour zero drift or 24-hour span drift exceeds two times the limits of the applicable performance specifications in Appendix B. The system must allow the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified. [40 CFR Part 60 Subpart A - General Provisions, Section 60.13(d)(1)]
26. Upon District request, PG&E shall use ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 (or subsequent or approved alternative method) to determine compliance with the SOx emission limits specified in condition 7. and the natural gas sulfur content standard in condition 9. [40 CFR Part 60 Subpart GG - Standards of Performance for Stationary Gas Turbines, Section 60.335(d)]
27. Except for CEM/CCEM system breakdowns, repairs, calibration checks, and zero and span adjustments, the continuous monitoring system shall be in continuous operation and shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. [40 CFR Part 60 Subpart A - General Provisions, Section 60.13(e)]
28. The CEM or CCEMS shall reduce all data to 1-hour averages which shall be computed from four or more data points equally spaced over each 1-hour period. Data recorded during periods of CEM or CCEMS breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages. [40 CFR Part 60 Subpart A - General Provisions, Section 60.13(h)]
29. PG&E shall submit an excess emissions and monitoring systems performance report and/or a summary report to the District and the EPA quarterly. This report shall contain the

information specified in 40 CFR Part 60 Subpart A - General Provisions, Section 60.7(c) and (d) and shall be postmarked by the 30th day following the end of each calendar quarter. [40 CFR Part 60 Subpart GG - Standards of Performance for Stationary Gas Turbines, Section 60.334(c), 40 CFR Part 60 Subpart A - General Provisions, Section 60.7(c) and (d)]

30. PG&E shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the Solar Mars gas turbine; any malfunction of the air pollution control equipment; or any periods during which the continuous monitoring system is inoperative. [40 CFR Part 60 Subpart A - General Provisions, Section 60.7(b)]
31. PG&E shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; and adjustments and maintenance performed on these systems or devices recorded in a permanent form suitable for inspection. The file shall be retained for at least five years following the date of such measurements, maintenance, reports, and records. [40 CFR Part 60 Subpart A - General Provisions, Section 60.7(f)]

### **STANDARD CONDITIONS**

32. PG&E shall comply with all conditions of this permit. [CCAPCD Rule 3.17]
33. This permit does not convey property rights or exclusive privilege of any sort. [CCAPCD Rule 3.17]
34. Non-compliance with any permit condition is grounds for permit termination, revocation and reissuance, modification, enforcement action, or denial of permit renewal. [CCAPCD Rule 3.17]
35. This permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by the district. [CCAPCD Rule 3.17]
36. It shall not be a defense for PG&E in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [CCAPCD Rule 3.17]
37. A pending permit action or notification of anticipated noncompliance does not stay any permit condition. [CCAPCD Rule 3.17]
38. Within a reasonable time period, PG&E shall furnish any information requested by the APCO, in writing, for the purpose of determining: 1) compliance with the permit, or 2) whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action. [CCAPCD Rule 3.17]

39. An Authority to Construct application shall be obtained from the District prior to the modification or replacement of any equipment for which a Permit to Operate has been granted; and prior to the installation and operation of any equipment for which an Authority to Construct is required, pursuant to Colusa County APCD Rule 2.5 - PERMITS REQUIRED. [CCAPCD Rule 2.5 - PERMITS REQUIRED (current Rule 3.1 - PERMITS REQUIRED), approved by U.S. EPA in 37FR19812 (9/22/72)]
40. PG&E shall not build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. [40 CFR Part 60 Subpart A - General Provisions, Section 60.12]
41. This permit is not transferable, either from one location to another, from one piece of equipment to another, or from one person to another except on written approval of the APCO. Prior to a transfer of ownership, the APCO shall receive a written agreement which specifies a date for the transfer of permit responsibility, coverage, and liability from PG&E to the prospective permittee. [CCAPCD Rule 3.17]
42. The Regional Administrator of U.S. EPA, the Executive Officer of the California Air Resources Board, the APCO, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises:
  - a. To inspect the stationary source, including equipment, work practices, operations, and emission-related activity;
  - b. To inspect and duplicate records required by this Permit to Operate; and
  - c. To sample substances or monitor emissions from the source or other parameters to assure compliance with the permit or applicable requirements. Monitoring of emissions can include source testing.[CCAPCD Rule 3.17]
43. The provisions of this Permit to Operate are severable, and, if any provision of this Permit to Operate is held invalid, the remainder of this Permit to Operate shall not be affected thereby. [CCAPCD Rule 3.17]
44. This Permit to Operate shall become invalid five years from the date of issuance. PG&E shall apply for renewal of this permit no later than 6 months before the date of expiration. Upon submittal of a timely and complete renewal application, this permit to operate shall remain in effect until the APCO issues or denies the renewal application. [CCAPCD Rule 3.17]
45. PG&E shall remit the Title V supplemental annual fee to the district in a timely basis.

Failure to remit fees on a timely basis is grounds for forfeiture of this Permit to Operate. Operation without a permit to operate subjects the source to potential enforcement action by the District and the U.S. EPA pursuant to section 502(a) of the Clean Air Act. [CCAPCD Rule 3.17]

46. Persons performing maintenance, service, repair or disposal of appliances using CFCs, HCFCs or other ozone-depleting substances must be certified by an approved technician certification program. [40 CFR 82.161, Stratospheric Ozone Protection]
47. Persons opening appliances using CFCs, HCFCs or other ozone-depleting substances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156. [40 CFR 82.156, Stratospheric Ozone Protection]
48. Equipment used during the maintenance, service, repair, or disposal of appliances using CFCs, HCFCs or other ozone-depleting substances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158. [40 CFR 82.158, Stratospheric Ozone Protection]